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page 434 is 0″·6 less than that for December 9 on page 223. A comparison of the semidiameter of *Venus*, given on pages 313 and 434, will show the amount of correction applied to the planet's semidiameter.

Since my attention has been drawn to the paragraph quoted from Mr. Hill's report, I have been informed by Mr. Hind that the adopted corrections have been deduced from the meridional observations of the Sun and *Venus* made at Greenwich. The correction applied to the *Nautical Almanac* semidiameter of the Sun is therefore — 0″·53, which is the same as that given in the Introduction to the *Greenwich Observations*, as the mean result of numerous comparisons of the observed and tabular diameters. Mr. Hind has availed himself of Mr. Stone's value of the semidiameter of *Venus*, as the best possible modern determination, resulting as it does from a considerable number of vertical measurements of the diameter observed with the transit-circle at the Royal Observatory. (*Monthly Notices*, vol. xxv. pp. 57–59.)

Kidbrooke, Blackheath,
March 6, 1873.

On the Markings on Venus. By J. M. Wilson, Esq.

As some doubt exists whether markings are ever really seen on *Venus*, it may be worth while to call attention to the present appearance of the planet. There certainly *seems* to be the same bright region round the north cusp, separated by a darker region from the rest of the surface, that was frequently observed here in 1871. But it would be well that it should be examined by others.

The instrument used here is Alvan Clark's 8¼-inch, powers various.

Temple Observatory, Rugby,
Feb. 13.

Note by Mr. Denison on his Paper on the Barometric Error of Clocks.

Since the printing of my paper of last January I have found that Dr. Robinson's barometric compensation was the same in principle as mine, though I inferred the contrary from the way he spoke of it, and he gave no reference to his own description, which I find in the 5th volume of the *Memoirs*. He used two barometers entirely above the bob, while I think one sufficient, as a slight want of symmetry in the plane of vibration cannot affect the pendulum sensibly, if at all. And with an iron jar, which all the best pendulums now have, the barometer cannot be

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above it, for the reason which I gave before. These, however, are mere matters of detail, and I am glad to see that such a compensation is "perfectly successful."

It may be as well to mention, that "Baily's result for a detached one, viz. 0·41 sec.," mentioned by Dr. Robinson, does not mean a "detached escapement;" but what is more generally called a *free* pendulum, set vibrating without a clock, and observed as long as it will swing a considerable arc. The number of values of the barometric error which have now been mentioned proves the necessity of ascertaining it, by trial of the individual clock, before calculating the correction for it.

I had not seen the Westminster pendulum for some years until the other day, when I was asked to explain the clock to the members of the Horological Institute, and I find the arc is even larger than I stated from memory, and, as near as I could see, is 2° 45′; the very arc at which Baily calculated that the circular error ought to compensate the barometric (*Phil. Trans.* of 1832). This confirms the conclusion arrived at before from the rate of the clock during last year.

I have also been told by a very able clockmaker, Mr. Brock, of George Street, Portman Square, that he has often found so many clocks affected in the same direction at the same time, with no apparent cause, that he had come to the conclusion that they are affected by the electrical state of the atmosphere, as they certainly are sometimes by thunderstorms. That point is worth attending to by those who have the means of doing so, now that the electricity of the atmosphere is regularly observed.

On Mr. Denison's Compensation for the Barometric Error of Clocks. By the Rev. T. R. Robinson, D.D.

In Mr. Denison's paper on this subject there are two points which require a few words from me: one, his statement, "that it seems that it" (the compensation) "had been done in some way;" the other, "that I had found difficulty in calculating the adjustments for it."

If Mr. Denison will look at page xix. of the Introduction to the *Armagh Catalogue*, he will find a description of my compensation, and will see that his own differs from it only by the complex and inconvenient arrangement of his tubes.

There is no difficulty in calculating the diameter and position of the barometers which shall compensate a given pendulum; but there is much in making the working of that compensation perfect. This can only be done by applying the method of of minimum squares to a large number of rate observations, extending over periods which shall include the extreme annual range of temperature. Three unknown quantities must be determined;

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